

CLAIMS

What is claimed is:

1. A method for implementing multiple functions in a device, said
5 method comprising:
- a) receiving configuration information into a configuration register of said device, said device comprising a plurality of analog blocks coupled in a single integrated circuit, said plurality of analog blocks comprising a first set of analog blocks that can be selectively and electrically coupled to and decoupled from
10 another analog block, wherein said configuration information is for selectively and electrically coupling analog blocks in a particular configuration according to an analog function to be performed; and
- b) coupling electrically selected analog blocks according to said configuration information in said configuration register to achieve said analog
15 function.
2. The method of Claim 1 comprising:
- changing dynamically said configuration information to achieve a different analog function.
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3. The method of Claim 1 wherein said configuration information in said configuration register is for specifying inputs and outputs of each of said analog blocks according to said analog function.

4. The method of Claim 1 wherein an analog block comprises a plurality of analog elements having changeable characteristics, wherein said configuration information in said configuration register is for specifying characteristics of said analog elements according to said analog function.

5. The method of Claim 1 wherein the step of receiving configuration information is performed during bootup of a system comprising said device.

6. The method of Claim 1 wherein the step of receiving configuration information is performed during program execution subsequent to bootup of a system comprising said device.

7. The method of Claim 1 wherein said first set of analog blocks comprises switched capacitor blocks.

8. The method of Claim 1 wherein said plurality of analog blocks also comprises a second set of analog blocks, wherein said second set of analog blocks comprises continuous time blocks.

9. The method of Claim 1 comprising:
storing an address for said configuration register in a register bank.

10. A method for configuring a device, said method comprising:

a) receiving configuration information into a configuration register of said device, said device comprising an analog block comprising a plurality of analog elements having changeable characteristics, wherein said configuration

5 information is for specifying characteristics of said analog elements according to an analog function to be performed; and

b) setting said characteristics of said analog elements according to said configuration register to achieve said analog function.

10 11. The method of Claim 10 comprising:

changing dynamically said configuration information to achieve a different analog function.

12. The method of Claim 10 wherein said configuration information in
15 said configuration register is for specifying inputs and outputs of said analog block according to said analog function.

13. The method of Claim 10 wherein said analog block can be
selectively and electrically coupled to and decoupled from another analog
20 block, wherein said configuration information is for causing said analog block to be electrically coupled to a selected analog block.

14. The method of Claim 10 wherein said analog block is a switched capacitor block.

15. The method of Claim 10 wherein said analog block is a
5 continuous time block.

16. The method of Claim 10 wherein the step of receiving
configuration information is performed during bootup of a system comprising
said analog block.

10 17. The method of Claim 10 wherein the step of receiving
configuration information is performed during program execution subsequent to
bootup of a system comprising said analog block.

15 18. The method of Claim 10 comprising:
storing an address for said configuration register in a register bank.

19. The method of Claim 10 wherein said step b) comprises:
setting a bit in said configuration register to a first value to include a
20 compensating capacitor when said analog block is to perform a comparator
function and to a second value to bypass said compensating capacitor.

20. The method of Claim 10 wherein said step b) comprises:

setting bits in said configuration register to specify a power level for said analog block.

5 21. The method of Claim 10 wherein said step b) comprises:

setting bits in said configuration register to specify a resistance of a resistor in said analog block.

22. The method of Claim 10 wherein said step b) comprises:

10 setting bits in said configuration register to specify a capacitance of a capacitor in said analog block.

23. The method of Claim 10 wherein said step b) comprises:

15 setting a bit in said configuration register to change the phase of an input to said analog block.

24. The method of Claim 10 wherein said step b) comprises:

setting a bit in said configuration register to select a clock phase for sampling an input to said analog block.

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25. The method of Claim 10 wherein said step b) comprises:

setting a bit in said configuration register to control a gated switch in said analog block.

26. A method for configuring a device comprising a plurality of analog blocks coupled in a single integrated circuit, said method comprising:

- 5 a) receiving configuration information into a configuration register of said device, wherein said configuration information is for causing an analog block to be selectively and electrically coupled to another analog block according to an analog function to be performed, said configuration information also for specifying analog characteristics of said analog block and for selecting inputs and outputs of said analog block; and
- 10 b) changing dynamically said configuration information to effect a change to said analog function.

27. The method of Claim 26 comprising:

coupling electrically first selected analog blocks according to first configuration information in said configuration register to achieve a first analog function;

15 setting characteristics of said first selected analog blocks according to said first configuration information to achieve said first analog function;

changing in said configuration register said first configuration information to second configuration information;

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coupling electrically second selected analog blocks according to said second configuration information to achieve a second analog function; and

setting characteristics of said second selected analog blocks according to said second configuration information to achieve said second analog function.

- 5 28. The method of Claim 27 further comprising:
- selecting inputs and outputs of each of said first selected analog blocks according to said first analog function; and
- selecting inputs and outputs of each of said second selected analog blocks according to said second analog function.

- 10 29. The method of Claim 26 wherein said analog blocks comprise switched capacitor blocks and continuous time blocks.